

REMARKS

Claims 16-30 are pending in the application. Applicants thank the Examiner for the withdrawal of the Objection to the Specification and the withdrawal of the rejections of claims 22, 24, and 27 under 35 U.S.C. § 112, second paragraph, as being indefinite in view of the April 14, 2010 Amendment. Applicants also thank the Examiner for acknowledging that claim 23 includes patentable subject matter.

The Claimed Invention

The present invention relates to a dishwashing machine having a novel filter system for cleaning dishwashing liquid. The invention also relates to a method of using the novel filter system to clean the dishwashing liquid. In the present invention, the filter system includes a foam volume, and the filter system and a container of the dishwashing machine are communicated with one another such that at least some of the dishwashing liquid can be discharged from the dishwashing container in association with a washing cycle of the dishwashing machine to a foam volume for passage of the discharged dishwashing liquid through the foam volume. In this manner, dishwashing residue contained in the dishwashing liquid is at least partially absorbed or retained by the foam volume.

In the invention, capturing dishwashing residue in the foam allows for prevention of the dishwashing residue clogging parts of the dishwasher. It also allows for a better cleaning result.

The Rejections under 35 U.S.C. § 103(a)

Claims 16-22, 24, 26-28 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim et al. (U.S. Patent Publication No. 2002/0074026) in view of Kemper (U.S. Patent No. 6,413,366). Claim 25 stands rejected under § 35 U.S.C. 103(a) as being unpatentable over Kim et al. in view of Kemper, and further in view of Damron et al. (U.S. Patent No. 6,402,855). Claim 29 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim et al. in view of Kemper, and further in view of Valenzuela et al. (U.S. Patent No. 5,234,112). Applicants respectfully traverse these rejections.

As noted in the April 14, 2010 Amendment, the present invention recites "a filter system for cleaning dishwashing liquid, the filter system including a foam volume and the filter system and the dishwashing container being communicated with one another such that at least some of the dishwashing liquid can be discharged from the dishwashing container in association with a washing cycle of the dishwashing machine to the foam volume for passage of the discharged dishwashing liquid through the foam volume, wherein dishwashing residue contained in the dishwashing liquid is at least partially absorbed or retained by the foam volume." The grounds of rejection again acknowledge that this feature is not disclosed in Kim et al. Rather, Kim et al. is used in the grounds of rejection to show a conventional dishwasher having a filter system. In the conventional

Kim et al. dishwasher, referring to Figure 1, the filtering means includes a water collector 60 disposed below a bottom surface of a case 10, a primary filter (coarse filter) 62, and a secondary filter (fine filter) 64 which are installed in the water collector 60. Larger garbage particles are filtered out by the primary filter 62 preventing a drain port from clogging, and smaller garbage particles that have not been filtered by the primary filter 62 are filtered by the secondary filter 64, and discharged together with the washing water through the drain port of the drain pump 50 (see paragraph [0012]).

To make up for the lack of teaching of a filter system having a foam volume as in the present invention, the grounds of rejection state that Kemper teaches a filter for removing contaminants from a solution using foam such that the liquid solution is passed through the foam in order to remove contaminants from the liquid (citing the Abstract; col. 2, line 30 - col. 3, line 7 of Kemper). Therefore, the grounds of rejection allege that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the filter taught by Kemper in place of the filter of Kim et al. with a reasonable expectation of success because Kemper teaches that the filter removes contaminants from an incoming liquid by use of foam in order to retain the contaminants in the foam.

In the April 14, 2010 Amendment, Applicants respectfully submitted that the aforementioned combination can only be made using impermissible hindsight in view of Applicants own teachings in the present specification. In response, in this Office Action, the grounds of rejection generally note that “it must be recognized that any judgment on

obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper (citing *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971)).

First, Applicants note that the grounds of rejection point to no teachings in either Kim et al. or Kemper of using a Kemper-type filter in a dishwasher. Rather, Kemper is related to a filter process for separating at least a part of suspended contaminating particles out of a suspension containing fibrous material. The flotation process in Kemper is quite different than the foam dishwashing process used in the present invention. The Kemper process utilizes the differences between fibrous material and undesired solid particles in such a way that the fibrous material remains in the fiber suspension due to its hydrophilic nature whereas the mentioned material particles are hydrophobic and, therefore, move into the foam along with the air bubbles. As such, the material particles that Kemper relates to are primarily related to ink particles and adhesives, fine plastic particles, and resins (see col. 1, lines 11-36). Accordingly, one of ordinary skill in the art would not look to Kemper for a dishwashing filter solution, and therefore any such knowledge attributable to a Kemper process being used in a dishwasher is gleaned only from Applicants' own disclosure.

Next, the grounds of rejection state at page 3 of the Office Action in response to Applicants' arguments in the April 14, 2010 Amendment that Kemper teaches a filter for

removing contaminants from a solution using foam in order to remove contaminants from the liquid. Because both Kim et al and Kemper may teach filter systems for removing contaminants from liquids, the grounds of rejection conclude that it would have been obvious to one skilled in the art to substitute one filter system for the other to achieve the predictable result of removing contaminants from liquids.

Applicants respectfully submit that Kim et al. teach at paragraph [0014] that its dishwasher and filter system requires both the circulation pump 40 for use in the washing and rinsing processes and the drain pump 50 for use in the draining process. Therefore, at paragraph [0014], Kim et al. teach that such an arrangement requiring both pumps has problems in that the structure thereof is complex and the production costs thereof are high. Accordingly, Applicants respectfully submit that one of ordinary skill in the art at the time of invention would not be motivated by the teaching of Kim et al. to further add to this complexity and cost by including additional components and structure required for the introduction of a gas into the Kim et al. system. As such, Kim et al. teach away from the present invention. Therefore, Applicants respectfully submit that independent claims 16 and 27 are allowable, as well as their corresponding dependent claims.

Further, dependent claim 17 recites a feature whereby “the filter system includes a foam developer operable to mix liquid formed of at least one of the dishwashing liquid and a non-dishwashing liquid with air to produce the foam volume.” The grounds of rejection state “regarding the recitation “mix ... at least one of the dishwashing liquid and a non-dishwashing liquid with air”, this recitation is a statement of intended use which does not patentably distinguish over the modified Kim et al. system since the modified

Kim et al. system meets all the structural elements of the claims and is capable of mixing the dishwashing liquid with air if so desired (citing MPEP 2114). However, Applicants respectfully submit that neither Kim et al. nor Kemper teach the claimed structural feature of a foam developer that mixes dishwashing liquid and non-dishwashing liquid.

Finally, the grounds of rejection state that Applicants' arguments fail to comply with 37 CFR § 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicants have respectfully submitted herein as well as in the April 14, 2010 Amendment that the grounds of rejection acknowledge that Kim et al. do not disclose or suggest "a filter system for cleaning dishwashing liquid, the filter system including a foam volume and the filter system and the dishwashing container being communicated with one another such that at least some of the dishwashing liquid can be discharged from the dishwashing container in association with a washing cycle of the dishwashing machine to the foam volume for passage of the discharged dishwashing liquid through the foam volume, wherein dishwashing residue contained in the dishwashing liquid is at least partially absorbed or retained by the foam volume." Kemper does not make up for this deficiency for the reasons discussed above and as such, the grounds of rejection have not established a prima facie case for obviousness.

CONCLUSION

In view of the above, allowance of claims 16-30 are respectfully requested. If the Examiner has any questions regarding the remarks herein, the Examiner is kindly requested to contact the undersigned. If an extension of time for this paper is required, petition for extension is herewith made.

Respectfully submitted,

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